

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: **SYSTEM AND METHOD TO MINIMIZE THE AMOUNT OF NOX EMISSIONS BY OPTIMIZING THE AMOUNT OF SUPPLIED REDUCTANT**

April 30, 2007

Serial No.: 10/756,876

Group Art Unit: 3748

Filed: January 13, 2004

Examiner: Tu Minh Nguyen

For:

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

We declare as follows:

1. We are the named inventors of U.S. Patent Application Serial No. 10/756,876, filed January 13, 2004, and entitled **SYSTEM AND METHOD TO MINIMIZE THE AMOUNT OF NOX EMISSIONS BY OPTIMIZING THE AMOUNT OF SUPPLIED REDUCTANT**.

2. We conceived of our invention in this country before September 17, 2003, the filing date of the application resulting in United States Patent Application No. US 6,834,497 as demonstrated by Exhibit A titled "Invention Disclosure - Questionnaire Template" and Exhibit B titled "Minimization of the Purge NOx Release from a Lean NOx Trap by Optimizing the Amount of Reductant during the Purges", which are attached to this declaration.

3. Exhibits A and B were submitted by the inventors to an electronic disclosure system of the assignee of U.S. Patent Application Serial No. 10/756,876

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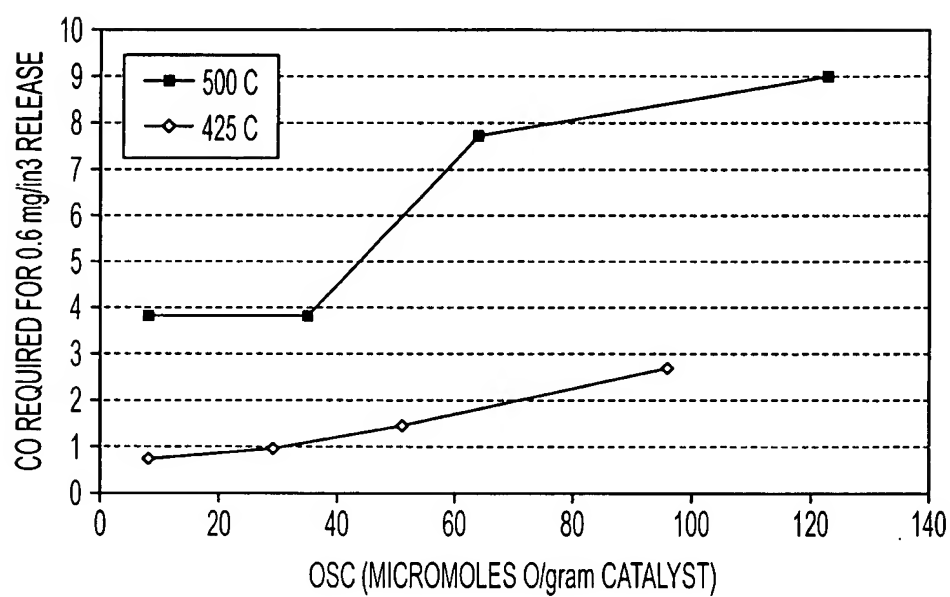


FIG. 11

before September 17, 2003, where they were electronically time stamped, thereby demonstrating that we conceived of the subject matter of claims 1 - 15 of U.S. Patent Application Serial No. 10/756,876 as originally filed before September 17, 2003.

4. Specifically, Exhibits A and B demonstrate that before September 17, 2003, we conceived of a method for controlling an engine having an exhaust with an emission control device capable of storing NOx during lean operating conditions, and converting at least a portion of said NOx during stoichiometric or rich operating conditions, the method comprising: 1) operating the engine to produce a lean exhaust gas mixture fed to the emission control device; 2) after said lean operation, operating the engine to produce a rich exhaust gas mixture fed to the emission control device, said rich air-fuel ratio determined as a function of at least the oxygen storage capacity of the device.

5. Specifically, Exhibits A and B demonstrate that before September 17, 2003, we conceived of a method for controlling an engine having an exhaust with an emission control device capable of storing NOx during lean operating conditions, and converting at least a portion said NOx during stoichiometric or rich operating conditions, the method comprising: 1) operating the engine to produce a lean exhaust gas mixture fed to the emission control device; 2) estimating the amount of NOx release based on the oxygen storage capacity of the device; 3) after said lean operation, operating the engine to produce a rich exhaust gas mixture fed to the emission control device, said rich air-fuel ratio is determined based at least on the amount of NOx released.

6. From before September 17, 2003 until January 13, 2004, the filing date of U.S. Patent Application Serial No. 10/756,876, we diligently worked toward perfecting the filing of the application.

7. All acts set forth herein and/or relied upon for the purpose of establishing invention prior to September 17, 2003 were carried out in the United States.

8. We declare that all statements made herein of our knowledge are true and all statements made on information and belief are believed to be true. These statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under § 1001 of Title 18 of the United States Code. We understand that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Date: _____

Christian Goralski Jr.

Date: _____

Gopichandra Sumilla

Date: 5/1/2007

Joseph R Theis
Joseph Theis

Date: 5/1/2007

Hungwen Jen
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Justin Ura
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